

IN THE CLAIMS

1. (Currently Amended) An apparatus Flat microwave antenna comprising of
a plurality of three stacked grounded metal plates, each with plurality of openings
(apertures) arranged about as a matrix of columns and rows, and
a plurality of antenna feed layersmechanisms, disposedsituated between the said plates,
wherein said apertures are arranged as matrix of columns and rows,
wherein the said a plurality of excitation probes areabout aligned by pairs with said
apertures for, forming that way antenna radiating elements;
and a solid metal plate disposed situated below adjacent the last one (bottom one) of the
said grounded plates, which together with three plate stack forms a plurality of two separate
antenna packages (Ap1) and (Ap2) containing two orthogonal polarizations, the wherein said
antenna packages further including include layer (8) with active devices assembled on it for an
active device layer providing initial amplification of the received signals and being coupled,
which are connected with the groups of radiating elements (4D, 5D, 1A) through coaxial
transitions (13) and a combining block (9), connected to the said active layer (8), wherein
antenna feed mechanisms layers (4,5) are arranged as subarrays and the antenna output is
connected through transition (12) to a twin Low Noise Block (LNB).

2. (Currently Amended) The apparatus Antenna of Claim 1, including insulating layers including
a low-loss dielectric material disposedwherein between thesaid grounded metal plates (1,2,3) and
thesaid antenna feed layers (4,5)mechanisms are situated insulating layers (6) made by a low loss

dielectric material.

3. (Currently Amended) The apparatus Antenna of Claims 1 or 2, wherein thesaid antenna feed mechanisms layers (4,5) are divided to sixteen subarrays, wherein pairs of each two of them are identical and form one quarter of the antenna.

4. (Currently Amended) The apparatus Antenna of Claim 3, wherein the antenna layers of each neighbouring antenna quarters (4,5) are rotated at 90° angle to each other.

5. (Currently Amended) The apparatus Antenna of Claim 1, wherein the antenna feed mechanism includes at the central conductor of at the strip line (4B, 5B) form said antenna feed layers (4,5) is made by and a metal sheet with a thickness of 0.1 to 0.3 mm, formed using processed using some of the known technologies for thin metal sheet etching to form strip feed (4B, 5B).

6. (Currently Amended) The apparatus Antenna of Claim 5, wherein the metal sheet forms supporting frames (4A, 5A) and elements for mechanical connection (4C).

7. (Currently Amended) The apparatus Antenna of Claim 6, wherein the said elements for mechanical connection (4C) are accomplished as RF decoupling circuits.

8. (Currently Amended) The apparatus Antenna of Claims 1 to 7, wherein the said radiating

elements (1A) have an octagonal shape with two parallel long sides and; two shorter parallel sides ~~four short sides~~, connecting each one of the corresponding ends of the long sides with the respective ends of each one of the shorter sides.

9. (Currently Amended) The apparatus Antenna of Claim 1, wherein one of the ~~the upper~~ metal plates includes ~~with~~ openings (1) ~~is made by a metal sheet (100) with openings (100A), which is much more~~ and is thicker than the rest of the metal plates (2,3) in the package.

10. (Cancel)